

1. A fuel-cell system, especially a drive system of a motor vehicle, having a reformer unit (18) for producing hydrogen from a raw material, especially a liquid raw material (28), in order to operate a downstream fuel-cell unit (10); an oxidation device (34) for converting carbon monoxide into carbon dioxide being located between reformer unit (18) and fuel-cell unit (10); characterized in that a water-injection device (26) is provided at the oxidation device (34), the water-injection device injecting water into the oxidation device.
2. The fuel-cell system as recited in Claim 1, characterized in that the reformer unit (18) has a mixer (20) for the raw material (28) and an oxygen-containing substance (30), especially water and/or air.
3. The fuel-cell system as recited in Claim 1 or 2, characterized in that a two-stage compressor (49) is provided, which feeds compressed air to a process gas (38), between oxidation device (34) and fuel-cell unit (10); and/or supplies compressed air to a cathode (14) of the fuel-cell unit (10).
4. The fuel-cell system as recited in one of the preceding claims, characterized in that a water separation device (40,62,68), in particular a condenser, is provided in an exhaust-gas stream (66) from a cathode (14) of the fuel-cell unit (10), and/or in an exhaust-gas stream (60) from an anode (12) of the fuel-cell unit (10), and/or in a cleaned-gas stream (38) from the oxidation unit (34); the water separation device separating the water contained in the corresponding gas (38,60,66), and supplying it to a water-storage device (30) upstream from the autothermal reformer unit (18).

5. The fuel-cell system as recited in Claim 4, characterized in that a separate water circulation loop (72) is provided, which cools at least one of the water separation devices (40,62,68), the fuel-cell unit (10,16), the air (48) supplied to a cathode (14) of the fuel-cell unit (10), and/or the air supplied to the reformer unit (18,20).

6. The fuel-cell system as recited in one of the preceding claims, characterized in that a catalytic burner (82) is provided, which combusts exhaust gas (60) from an anode (12) of the fuel-cell unit (10), and directs the corresponding waste heat through a heat exchanger (22), to the reformer unit (18).

7. The fuel-cell system as recited in Claim 6, characterized in that the catalytic burner (82) is connected to a supply tank (28) for the raw material.

8. The fuel-cell system as recited in one of the preceding claims, characterized in that an expander (94) is provided in an exhaust-gas stream (66) of a fuel-cell-unit (10) cathode (14), and a compressor (96), particularly a two-stage compressor (50), is provided in a supply-air stream (98) of the fuel-cell unit (10); the expander and compressor being arranged on a common shaft (100).

9. The fuel-cell system as recited in one of the preceding claims, characterized in that the raw material (28) is a hydrogen-containing substance, especially methanol or gasoline.

10. A process for generating electrical energy, using a fuel-cell system, especially for a drive system of a motor vehicle; hydrogen being produced from a raw material, in a reforming process, in order to operate a

fuel-cell unit; and carbon monoxide being oxidized to carbon dioxide after the reforming process, and in front of the fuel-cell unit, characterized in that water is injected during the oxidation of carbon monoxide to carbon dioxide.

11. The process as recited in Claim 10, characterized in that the water is injected in the form of a vapor or aerosol.
12. The process as recited in Claim 10 or 11, characterized in that compressed air is fed to a process gas, between the carbon-monoxide oxidation and the fuel-cell unit, and/or supplied to a cathode of the fuel-cell unit.
13. The process as recited in one of the Claims 10 through 12, characterized in that water is separated from a cathode-exhaust stream of the fuel-cell unit, and/or from an anode-exhaust stream of the fuel-cell unit, and is supplied to the reforming process.
14. The process as recited in one of the Claims 10 through 13, characterized in that an exhaust gas from an anode of the fuel-cell unit is burned, and the corresponding waste heat is fed to the reforming process.
15. The process as recited in one of the Claims 10 through 14, characterized in that raw material is burned, and the corresponding heat energy is fed to the reforming process.
16. The process as recited in one of the Claims 10 through 15, characterized in that a hydrogen-containing substance, especially methanol or gasoline, is used as a raw material.

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